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Characteristics of bioelectrical brain activity in people recovering from COVID-19

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Abstract

In COVID-19, two thirds of hospitalised patients have neurological complications. Therefore, the aim of the study was to evaluate EEG parameters in COVID-19 survivors who were not hospitalised. Fifteen critically ill and 20 conditionally healthy subjects were studied. The EEG was recorded on 21 leads, with an analysis epoch of 20 seconds. Electrodes were placed in a 10-20% pattern. Multivariate analysis of variance (MANOVA) was used for comparisons. Visual analysis of the EEG activity in the group of overtreated patients showed no gross disturbances in the neurophysiological activity of the brain. However, an increased amplitude of the θ rhythm was found in the group of overtreated patients, indicating a high level of activity in subcortical structures. There is also an increased amplitude of α1 and α2 rhythms, most pronounced in the parieto-occipital regions. The increased amplitude of the β1 rhythm compared to the control is of particular interest, which may indicate an increased level of functional activity in the cerebral cortex. The localisation of the changes in the right hemisphere gives reason to consider them as a sign of increased unproductive emotional tension. Such changes may create conditions for the development of a specific syndrome in the form of stress and anxiety.

Keywords: *EEG and COVID-19*

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